SITE ASSESSMENT FOR PROPOSED COKE POINT DREDGED MATERIAL CONTAINMENT FACILITY AT SPARROWS POINT

BALTIMORE COUNTY, MARYLAND

APPENDIX D

Offshore Geologic Cross Sections

Prepared for:

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Under Contract to:

Maryland Environmental Service

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APPENDIX D: OFFSHORE GEOLOGIC CROSS SECTIONS

Offshore boring logs from around the Coke Point peninsula were used to classify lithology into three major units: slag fill material, river bottom sediment, and Pleistocene lowland deposits. Geologic cross sections were constructed using RockWorks software, by interpolating the lithologic units between the boring locations. Field evidence of hydrocarbons is represented in the cross sections as pockets of residual NAPL, and was also extrapolated between logs where possible. Cross sections were constructed for sections both parallel and perpendicular to the shoreline of the peninsula, and all sections are shown with 10x vertical exaggeration to improve resolution of the different units.

Figures D-1 through D-3 show the abundance of slag fill material in the graving dock and extending approximately 750 feet off the northwestern corner of the peninsula. NAPL was detected within the slag fill material whenever it was sampled in this area, although extrapolation between boring logs was not always possible, due to the discontinuous nature of contamination (as opposed to sedimentary units) and substantial distance between sampling locations. These cross sections also show dramatic variation in the thickness of river bottom sediments in the offshore environment, with thickness generally increasing away from the shoreline.

Figures D4, D5, and D7 show that slag material is not present off of much of the rest of the western shore of the Peninsula, roughly south of location BH-SED-04.

Another area of slag deposits and NAPL contamination is seen in the turning basin, offshore from the Coal Tar Storage area (**Figures D-6 and D-9**). Here the slag sits atop relatively thick river bottom sediments. Apparently unassociated slag deposits are seen off the southwestern shore of the peninsula (**Figures D7 and D8**), with isolated NAPL off the southeastern shore.

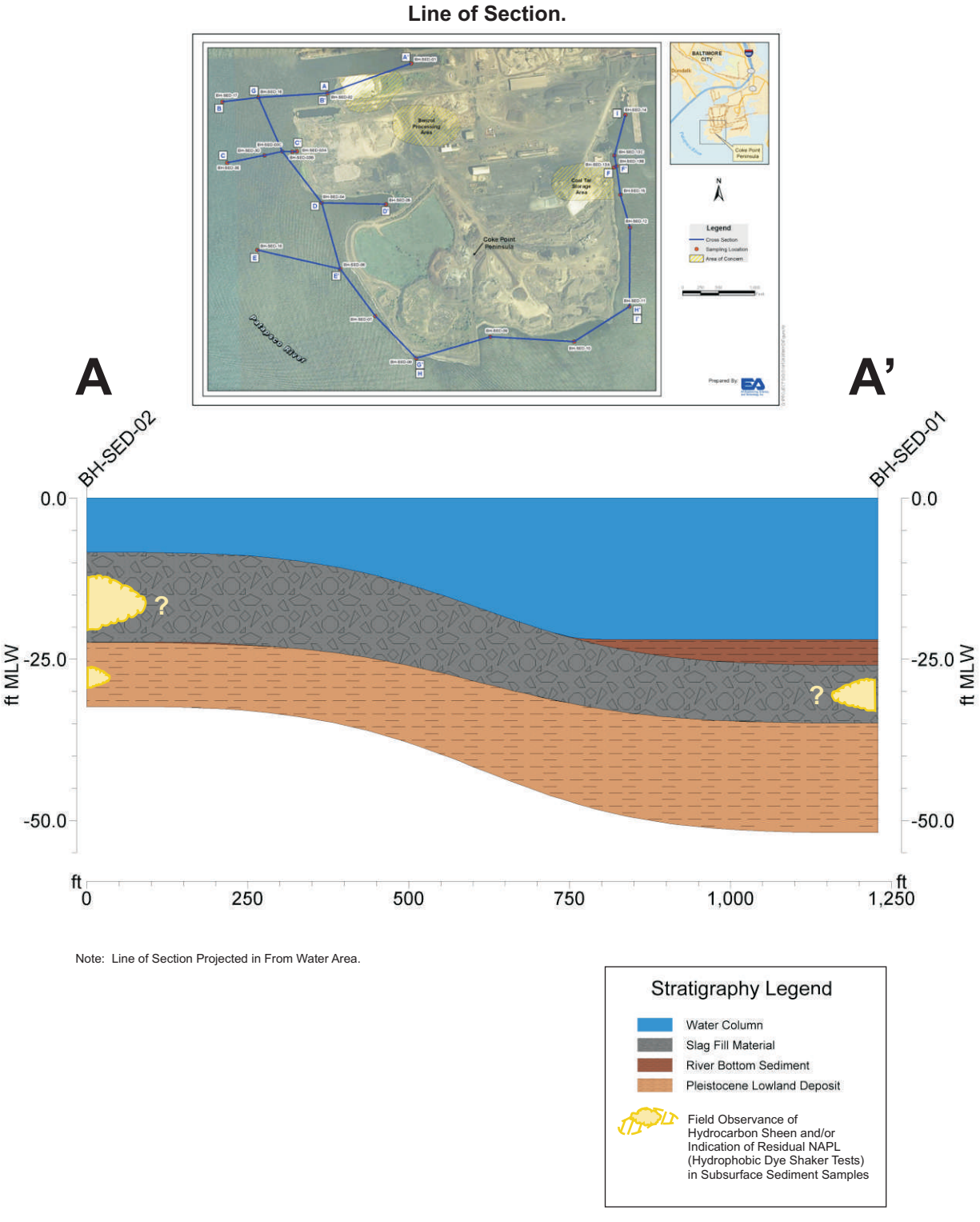
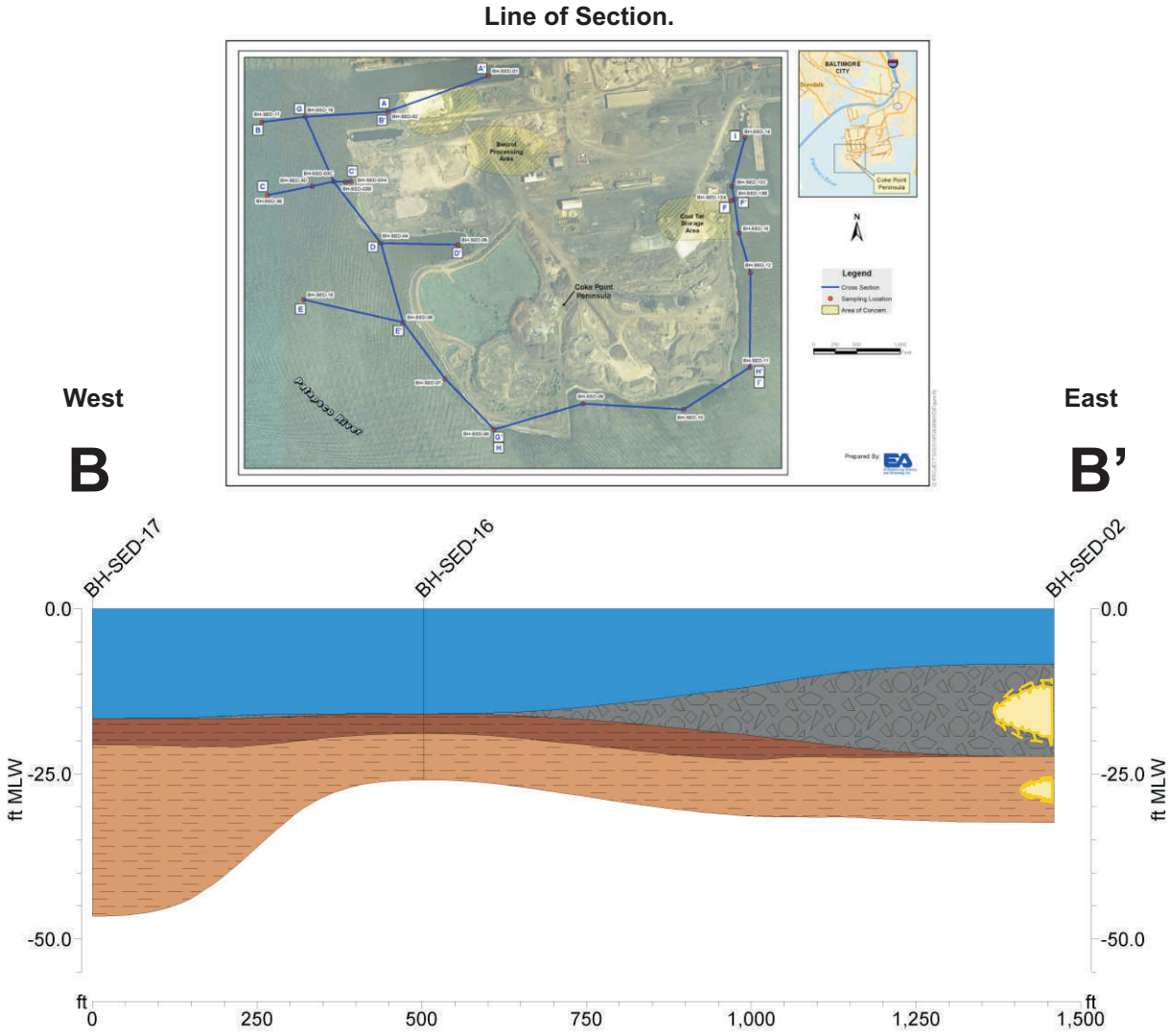


Figure D-1. Offshore Cross Section A-A' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.



Note: Line of Section Projected in From Water Area.

Figure D-2. Offshore Cross Section B-B' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.

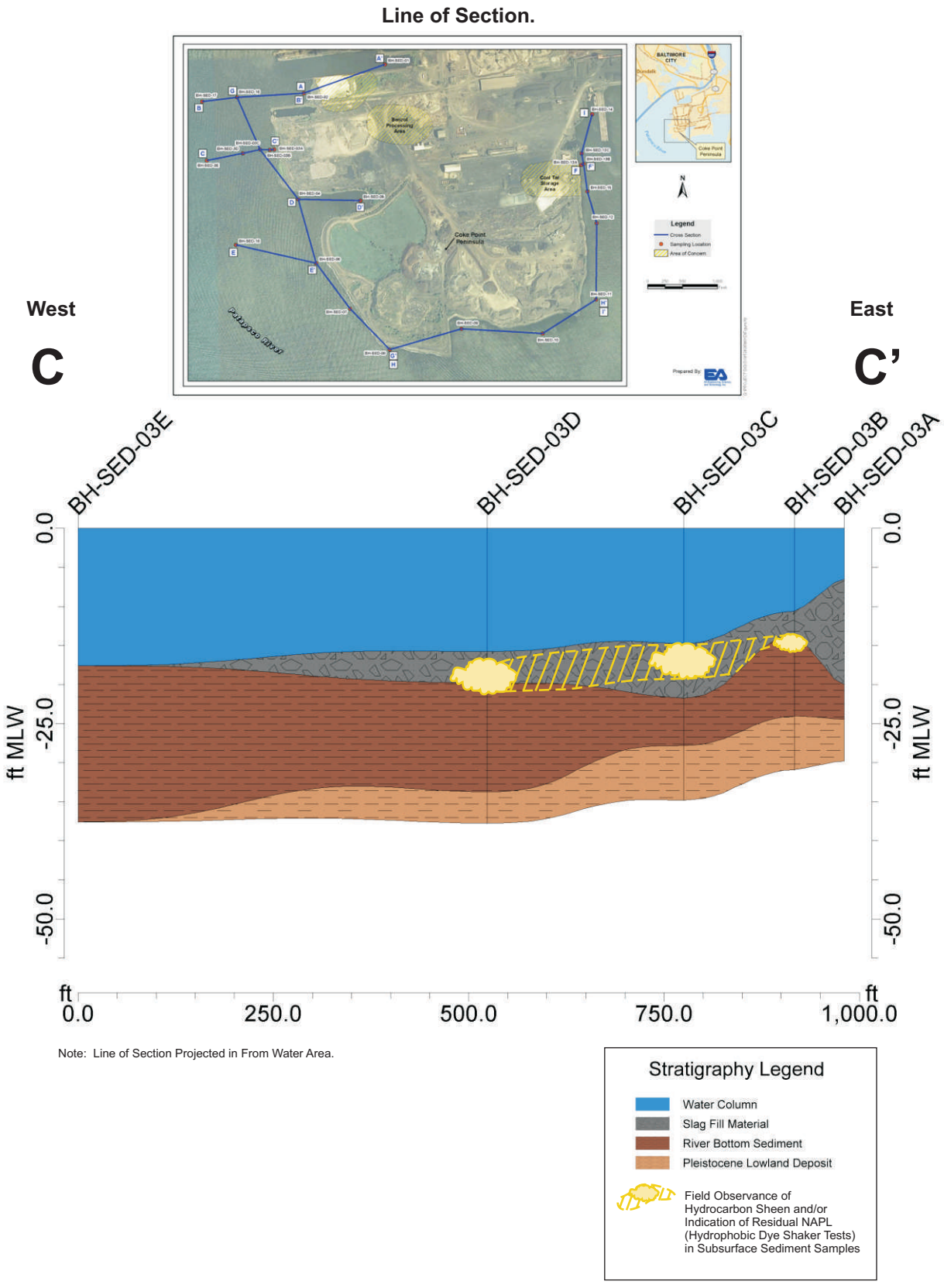


Figure D-3. Offshore Cross Section C-C' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.

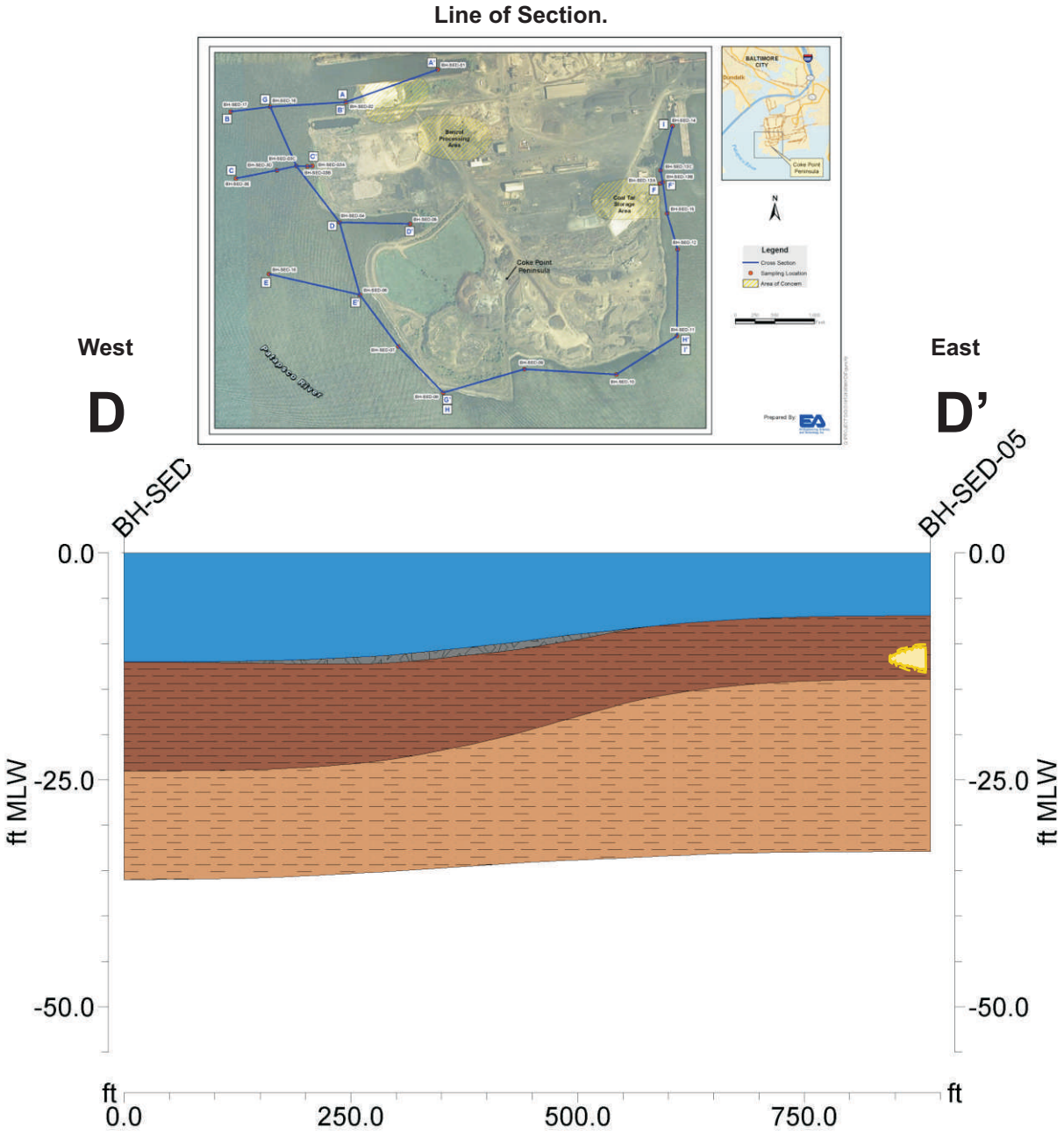
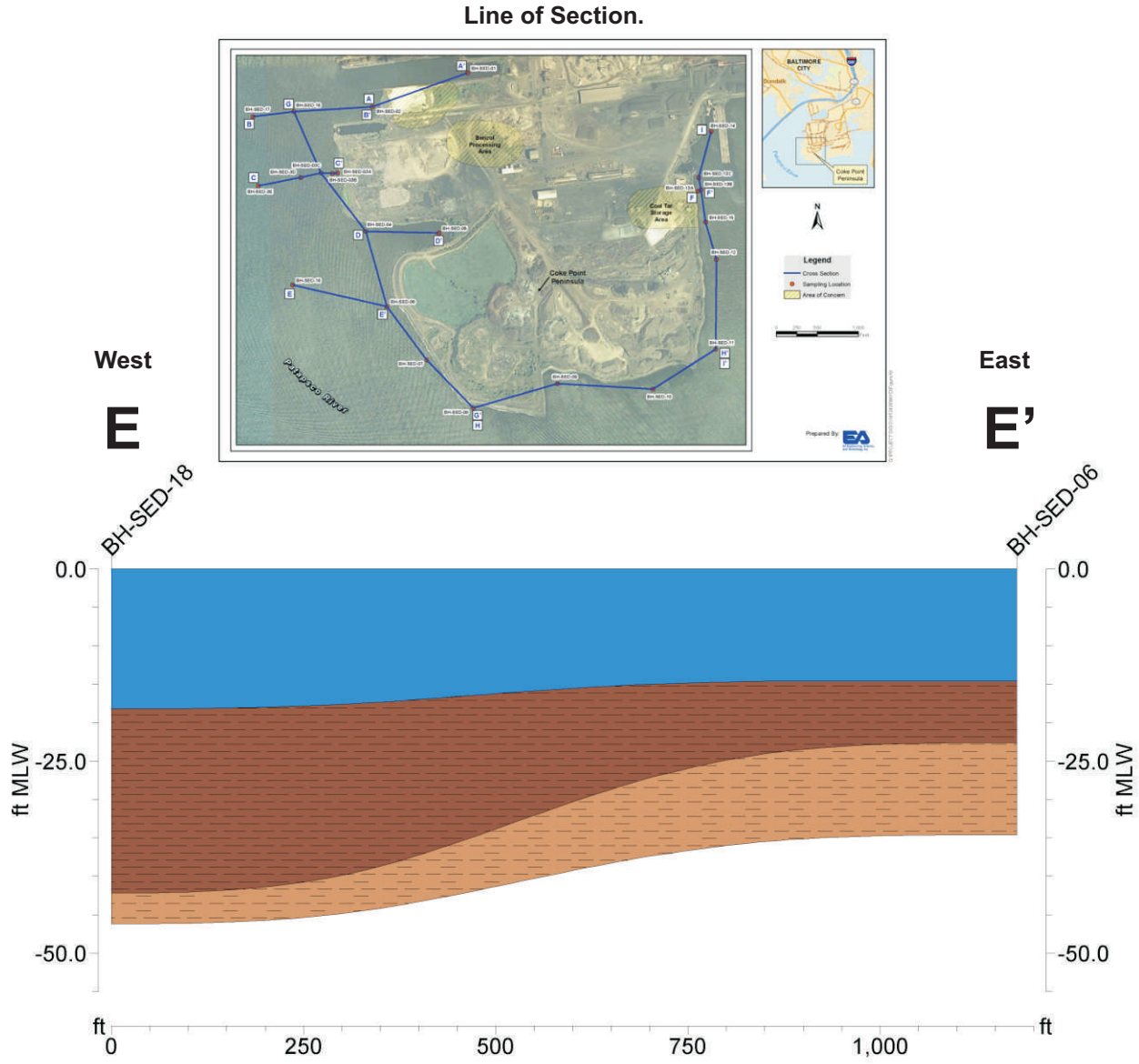


Figure D-4. Offshore Cross Section D-D' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.



Note: Line of Section Projected in From Water Area.

Figure D-5. Offshore Cross Section E-E' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.

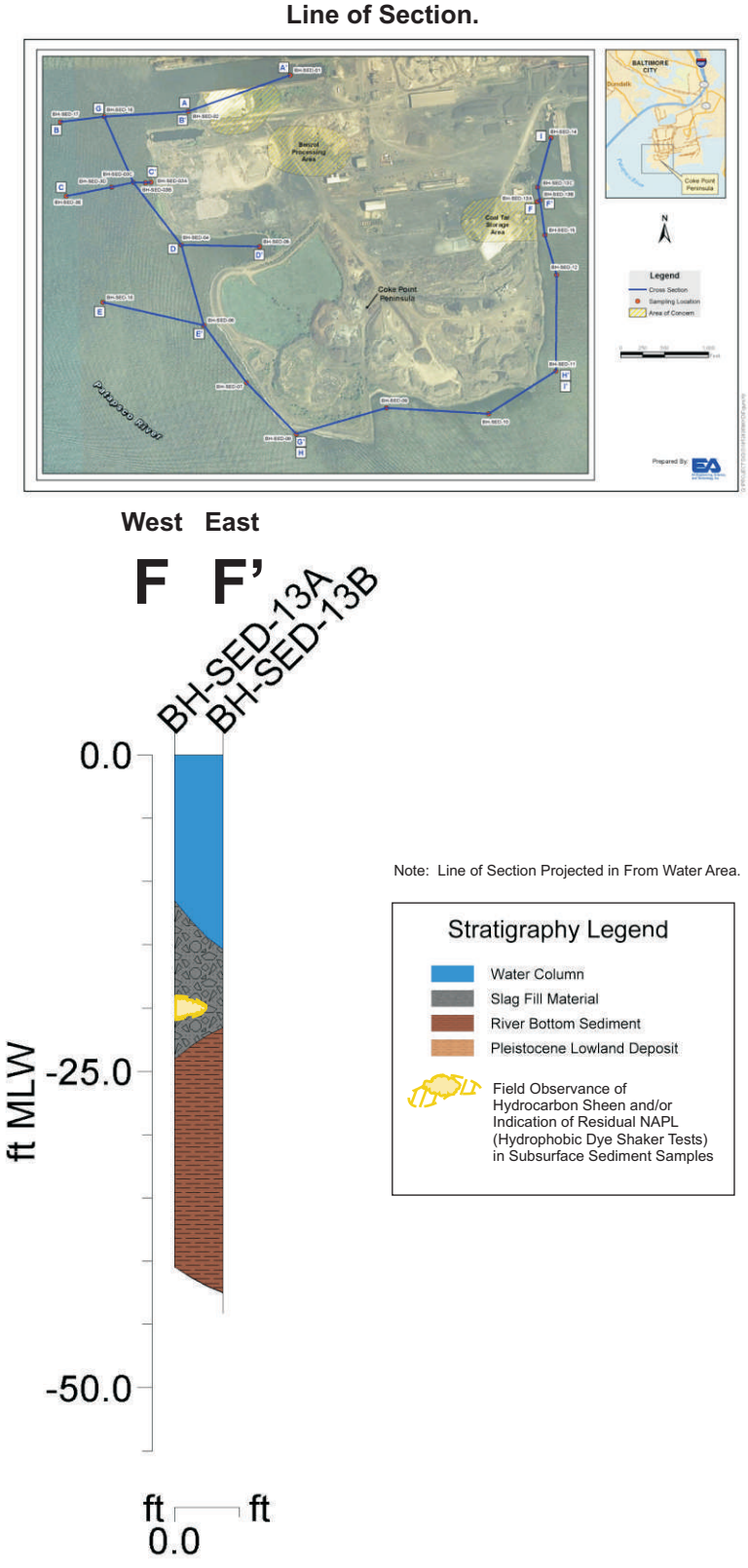
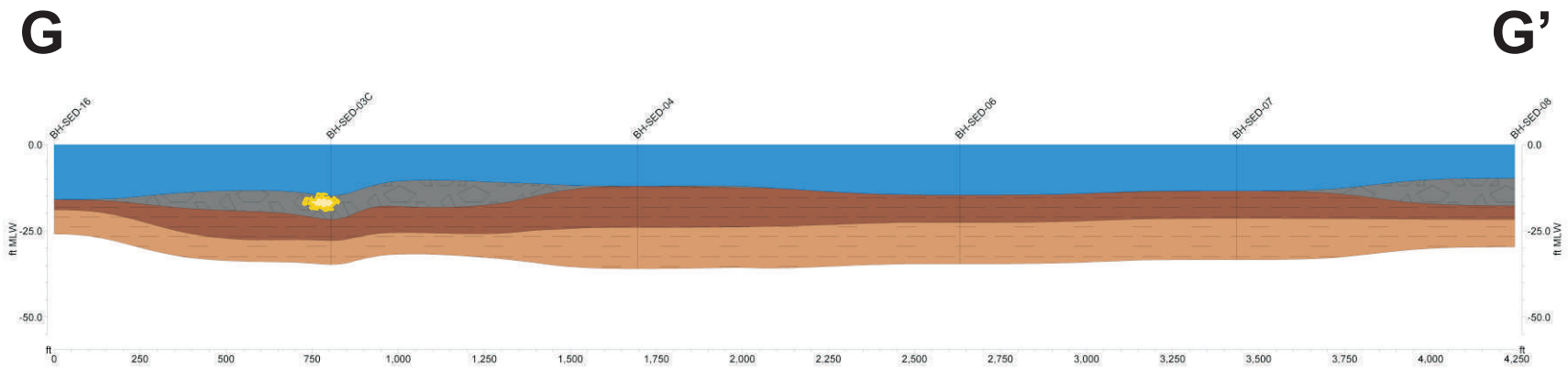


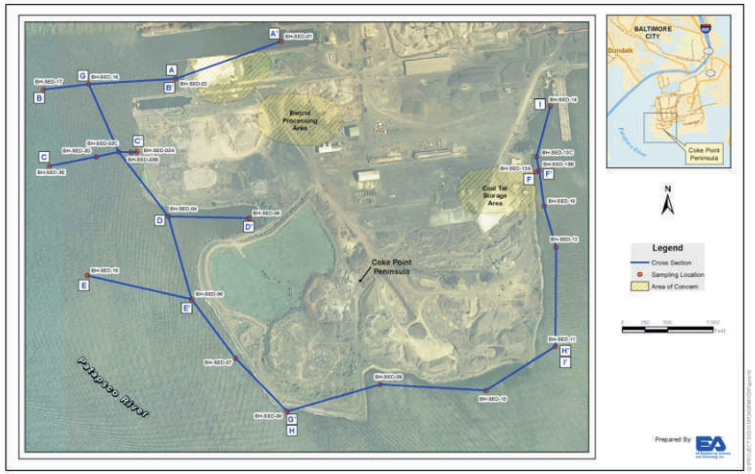
Figure D-6. Offshore Cross Section F-F' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.

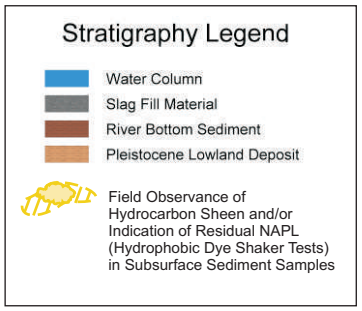
Northwest

Southeast



Line of Section.





Note: Line of Section Projected in From Water Area.

Figure D-7. Offshore Cross Section G-G' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.

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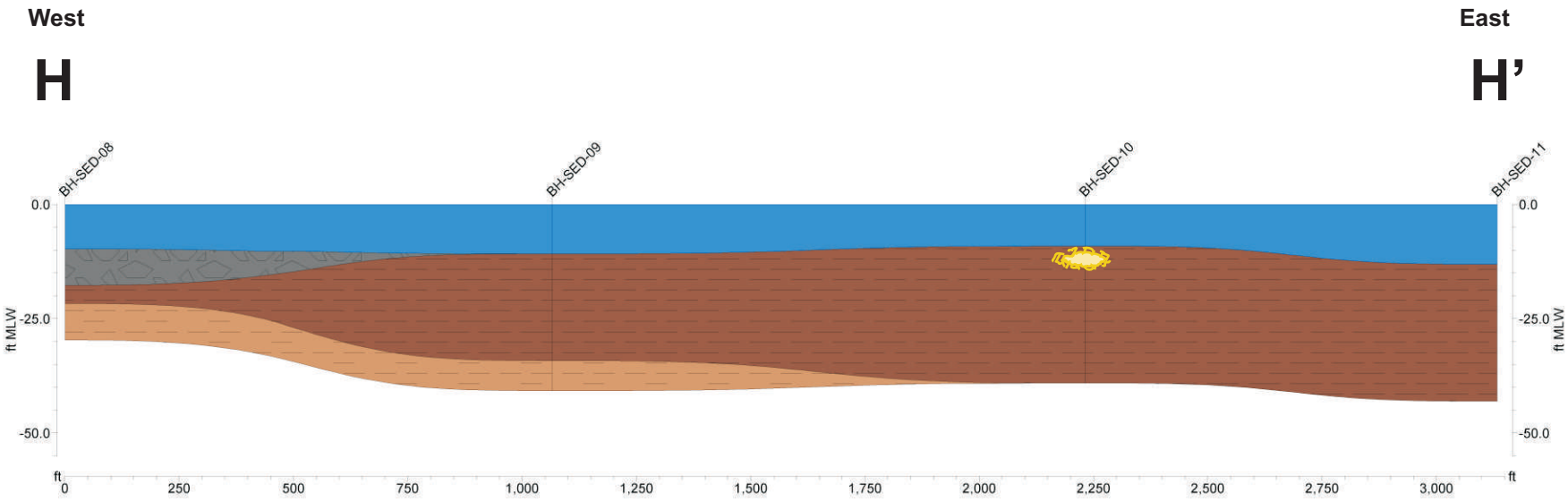
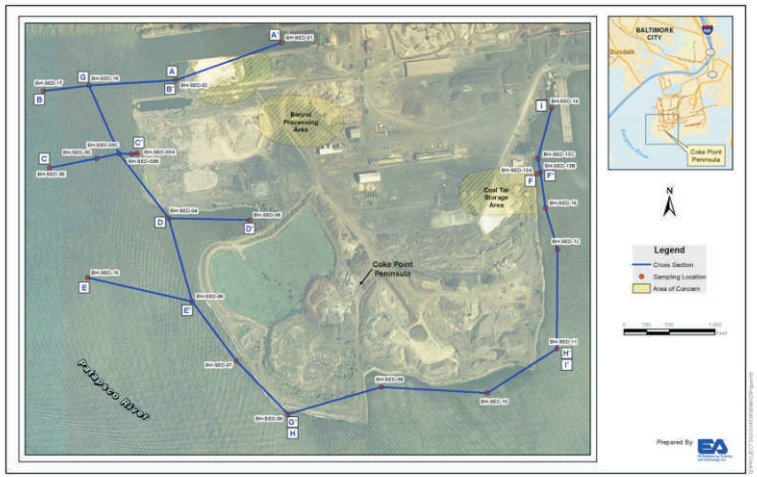
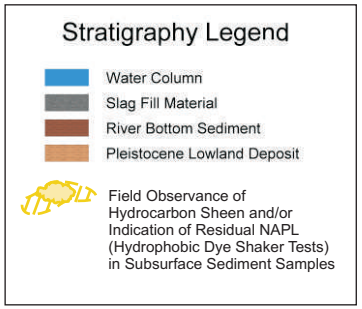


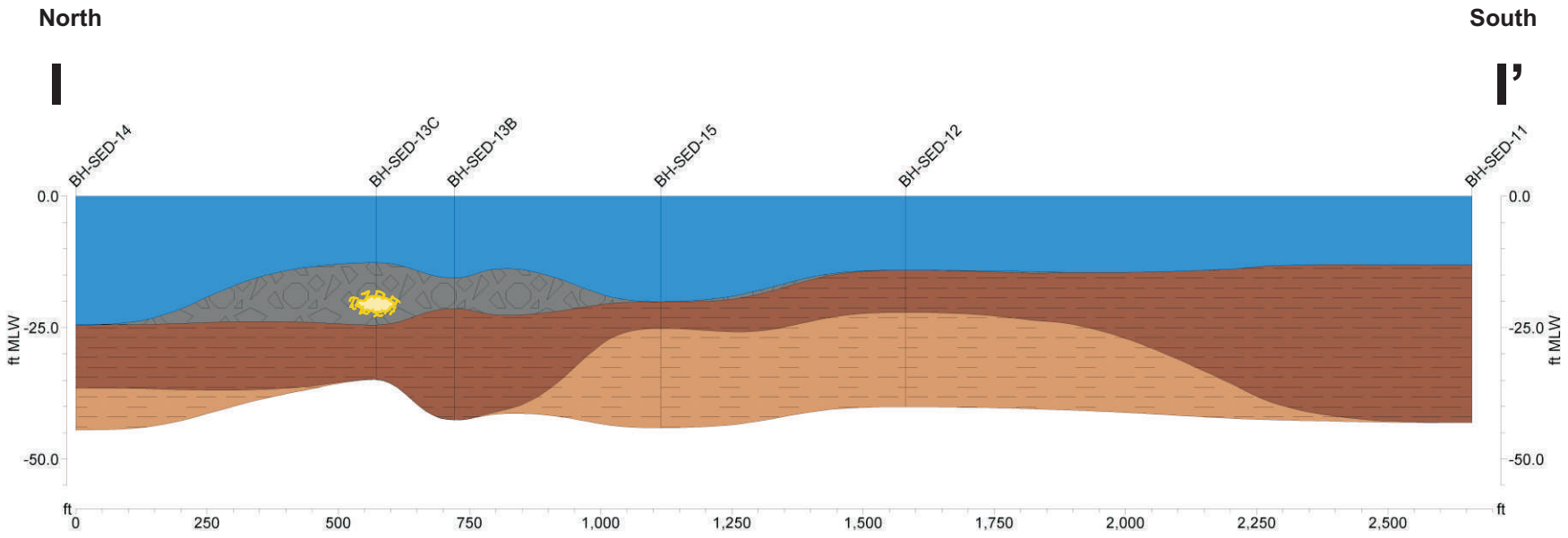
Line of Section.



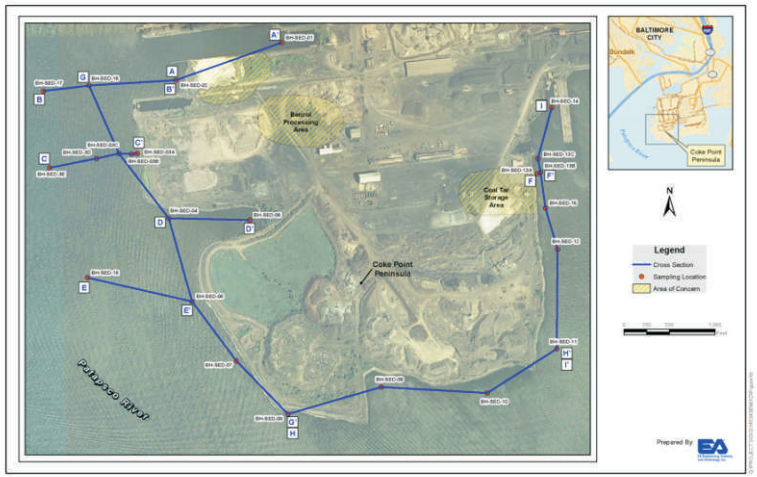


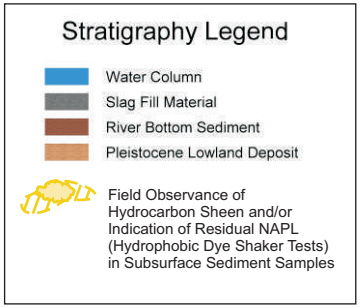
Note: Line of Section Projected in From Water Area.

Figure D-8. Offshore Cross Section H-H' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.



Line of Section.





Note: Line of Section Projected in From Water Area.

Figure D-9. Offshore Cross Section I-I' Showing Field-Observed Impacts, Coke Point Peninsula, Baltimore, Maryland.